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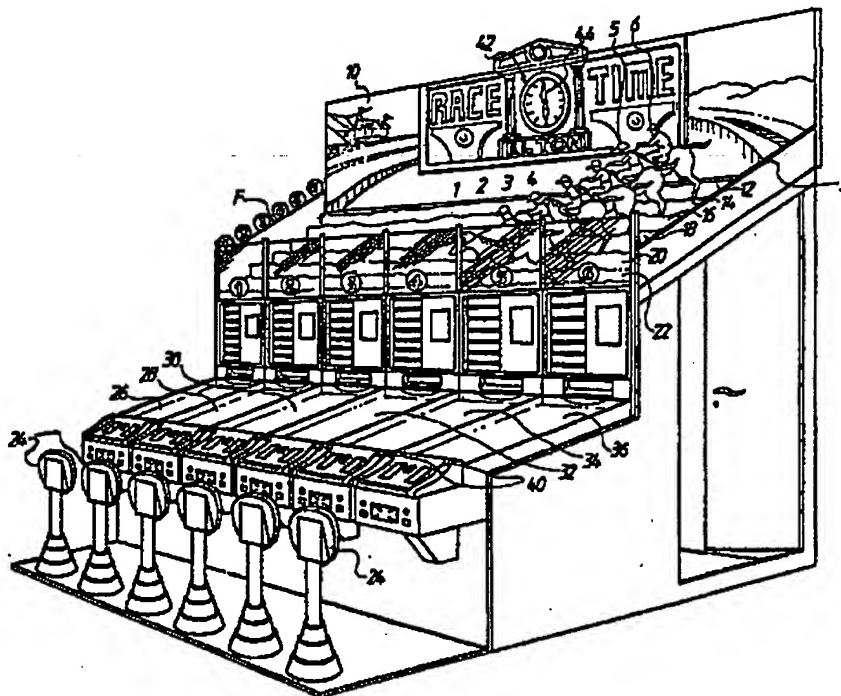
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(54) Title: GAME MACHINE FOR A NUMBER OF PLAYERS

(57) Abstract

The invention provides that a gaming and amusement apparatus is based upon the game playable by a number of players who operate individual bagatelle type tables (26-36). These tables are linked to model race horses (1-6) or the like which run in tracks (12-22) visible to all players. The horses (1-6) advance along the tracks (12-22) in proportion to the performance of the players, and the first player to advance his horse (1-6) to the winning line (F) is the winner. The invention provides on the one hand that the tables (26-36) are coin operated and that the value of the winning prize is proportional to the number of players and increases as the number of players increases. The apparatus has an indicator arrangement (42) to indicate to passers-by when each race is about to start, to induce them to join in, if there are places available. The invention on the other hand provides a novel form of feed for the balls (68) to be propelled by the players over the play tables (26-36).



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 96/00288

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G07F17/32 G07F17/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB,A,2 214 909 (SOUND LEISURE) 13 September 1989	13,14,16
Y	see page 5, line 1 - page 6, line 3; figures 1.2	15
Y	US,A,5 110 617 (GUNDLING ET AL.) 5 May 1992 see column 3, line 24 - line 38; figure 1	15
Y	EP,A,0 388 103 (ELTON FABRICATIONS) 19 September 1990 see column 2, line 23 - line 37 see column 2, line 49 - column 3, line 3 see column 3, line 40 - column 4, line 21; figure	1,2,7,8, 11,12 3
A		
Y	US,A,5 292 127 (KELLY ET AL.) 8 March 1994 see abstract; figure 1	1,2,7,8
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 96/00288

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US,A,5 116 055 (TRACY) 26 May 1992 see column 3, line 12 - line 30; figure 1 ---	1,11,12
A	DE,A,22 30 816 (ZIMMERMANN) 17 January 1974 see page 7, last paragraph - page 8, last paragraph; figures 1-3 -----	13-16

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB96/00288

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Claims 1-12
Claims 13-16

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 96/00288

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB-A-2214909	13-09-89	NONE	
US-A-5110617	05-05-92	NONE	
EP-A-388103	19-09-90	NONE	
US-A-5292127	08-03-94	US-A- 5318298	07-06-94
		US-A- 5409225	25-04-95
US-A-5116055	26-05-92	NONE	
DE-A-2230816	17-01-74	NONE	

GAME MACHINE FOR A NUMBER OF PLAYERS

This invention relates to the gaming and/or amusement apparatus of the type playable by a number of participants, and which involves the progression from a starting point or location to a finishing point or location, the play involving that the various players or participants endeavour to each be first to reach the finishing location. In this regard therefore the apparatus is in the nature of a race. The actual nature of the race can take any form, and may comprise a race against the clock, a race to a total number of points, or as in the present embodiment herein, a race from a starting line to a finishing line, involving the use of race components which may be in the form of race horses, or models of other articles which may be involved in races.

In one known form of apparatus of this type, a plurality of race components typically race horses, are mounted on parallel tracks corresponding to the number of possible participants. The race horses are mounted on trolleys which run on the tracks, and the trolleys are propelled step by step as a result of the performance of the respective participants in rolling a ball across a play table which has holes therein, the object being to cause the ball to fall through the holes. Depending upon which hole the ball falls through, so an appropriate number of points, for example 1, 2 or 3, is awarded to the player, and his component or horse steps forward the same number of steps as points attained. The winner is the participant whose horse is caused to be propelled first to the finishing line and this has the effect of terminating the game and automatically returning all of the horses to the starting line. A display means indicates which player is the winner and he will be automatically rewarded with a payout in the form of a cash payment or

and/or tokens. The game is coin operated insofar as each participant inserts a coin to take part in the race.

The play table slopes downwardly towards the player, and finishes in a ball collection pocket from which the player retrieves the ball manually and rolls it manually over the play surface. Should the ball fail to enter a play table hole, it will roll back to the player for him once more to propel the ball over the table. Should it fall through a hole it will operate a microswitch to cause the advancement of the play component, before again returning to the ball collection pocket.

This play apparatus is extremely popular and successful and is in use throughout the world. It has been in use for many years.

The present invention seeks to enhance play apparatus specifically of the above type, by providing for more excitement and more encouragement for playing participation so as to provide the operator of the apparatus with greater return.

In accordance with the invention in a first aspect, the play apparatus is arranged so that participation of each participant is by way of coin operation, and the pay out to the winning participant is increased dependent upon the number of players.

It can be seen that such an involvement of players provides for increased excitement insofar as passers by will be encouraged to participate having regard to the fact that the payout increases as each participant enters the game by putting his coin in the slot at an appropriate play location.

It can be seen that the invention can apply to a wide variety of game apparatus, and although it is preferred that the play participation involves the propelling of a ball over a play surface as in the apparatus of the prior art described above, it is realised that this is not strictly necessary. For example the player participation location could be defined by a slot machine-type apparatus, such as a fruit machine, and a player could not only be involved in the "race" of the combined apparatus, but he might also simultaneously play for individual wins on the slot machine apparatus at his play location. In this connection, the race part of the apparatus can take place over a period which involves different participants playing in sequence on the same participation part of the apparatus. For example if slot machines are used for the advancement of the race component when provided, one player may play the slot machine for a certain period of time to advance the component to a certain stage and even if he retired from play, a subsequent player can play on the same apparatus and continue to advance the play component.

Alternatively, the race section of the apparatus may be locked in to continuous participation of each participant until the race for that participation has been won and the play of the apparatus can commence.

In a particular embodiment of the apparatus, the race is one provided with a plurality of components corresponding to a plurality of play locations. The play locations may be of the bagatelle type in which a ball is propelled over a play surface. The ball may be discharged from the top of the play surface by the pulling of a lever or by a motorised mechanism and will run down a side portion of the surface to either one or other of a pair of "flipper" mechanisms of the type commonly used in pinball machines for the flicking of

the ball back over the play surface in a direction towards a series of holes which have the same function as the holes in the prior arrangement described above.

In order to attract attention, the play apparatus may be provided with a clock dial across which a hand sweeps, and at the end of each revolution of the hand, as it reaches the 12 o'clock position, a start bell sounds, and the race will commence at that time if a participant has put in the slot a coin at at least one play location. If another participant puts a coin in a slot of another play location during the race, that location retains a credit, but the coin is not returned so that that participant can take part in the next race. If a further participant puts a coin in a slot before the indicator hand reaches the 12 o'clock position and the start bell sounds, he can take part in the race. When the race starts either the or each participant pulls his ball release handle which releases a ball to enable the participant to play as described above, for those locations where no coin has been entered, the ball release mechanism is temporarily locked, or a motorised mechanism releases the ball automatically.

Depending upon the number of participants so the pay-out is progressively increased and therefore participants are encouraged to take part and to enter the race before the starting bell sounds. The pay-out level is indicated at each location and will automatically increase as each participant enters his coin.

It can be seen that this principle can readily be extended to an apparatus involving a bank of slot machines coupled to, for example, a race track layout with horses corresponding to the number of slot machines. Each slot machine could have a particular combination which provides that the corresponding

horse steps forward one step each time the combination is displayed. The jackpot could be provided when the race is won, to the player at the winning slot, and the jackpot will clearly increase with the increase in play of the respective slot machines, which would add considerably to the participants excitement. It would also encourage many participants to play the slot machines.

Many modifications and variations can be effected in accordance with the general principal of the invention, but specific embodiments are given hereinafter with reference to the accompanying drawings, wherein:-

Fig. 1 is a perspective view showing a game apparatus according to a first embodiment of the invention;

Fig. 2 is a plan view showing the layout of the play table;

Fig. 3 is a view showing the back display board of each play location;

Fig. 4 is a sectional elevation through the table showing how the ball delivery mechanism is operated.

Referring firstly to Fig. 1, the apparatus shown is a six-station apparatus so that six participants can take part at the same time. The apparatus comprises a back board 10 in front of which are six race tracks 12 to 22 having a start end S and a finish end F. At the start end are shown removable components in the form of model race horses and jockeys referenced 1 to 6, which correspond to the play locations 1 to 6 as marked on the front panel to the front side of the tracks 12 to 22. Six back supports 24 are provided for six participants to enable them to stand comfortably in front of bagatelle type tables 26 to 36.

In the play of the apparatus, the participants stand with their backs resting against stands 24, and enter the game by inserting an appropriate coin in a slot, to be described later, at each play table. When play starts, the motorised mechanism shown in Fig. 4 causes a ball to be propelled from the top end of the bagetelle playing surface so that it rolls down the surface. The player controls the propulsion of the ball over the play surface by means of flipper buttons 40 at each table, to be described in more detail hereinafter. As in the prior art, the propulsion of the components 1 to 6 is achieved by the causing of the ball at each play table to drop through particular scoring apertures in the table again to be described in greater detail hereinafter, so that the components 1 to 6 move forward along the appropriate race tracks 12 to 22, and the first component 1 to 6 to reach the finish line F is the winner. At this stage further movement of the components along the track is stopped, and in fact all components are returned to the start line. Commencement of the game is indicated by an indicator 42 on the back board, which is in the form of an indicator clock having a hand 44. As soon as one player has inserted a coin the hand sweeps round the clock, which provides an indication that a game is about to start, and the game indeed starts when the hand 44 reaches the 12 o'clock position. No game will commence unless, prior to the hand 44 reaching the 12 o'clock position, at least one participant has inserted at least one coin sufficient for one game in the appropriate coin slot. If no coin has been so inserted, then the clock will remain stationary. When a coin has been inserted, and when the hand 44 reaches the 12 o'clock position, the machine issues a warning bell sound indicating commencement of the game and the participant or participants can commence playing. As the hand is sweeping round the clock audible signals to encourage passers-by to play may be issued by the machine. At the

commencement of play, the motorised mechanisms will be operated causing issuance of a play ball as described in more detail hereinafter.

The attraction of the game is that depending upon the number of participants, so the pay-out to the winner is increased. Additionally, the machine can operate entirely without any attendant being present which represents a considerable saving in costs. Passers by will see that (a) the game is about to commence and (b) that the pay-out may be relatively high if there are many participants, and will be inclined to join in the game before it commences. Any player who inserts a coin in a slot of a play table after a game has commenced will not be allowed to participate in the game, will not receive any refund, but will be allowed to participate in the next game.

By way of example, if there is only one participant in any game, he may receive say two tokens and/or tickets and obviously he will eventually win the game, but for every participant the pay-out may be increased by a further two tokens and/or tickets for each game. The amount of tokens and/or tickets can vary, and there may be random jackpot games where much larger numbers of tokens and/or tickets are paid out.

Fig. 2 shows the play table configuration, and it will be seen to comprise thirteen scoring holes arranged in the configuration indicated. The reference numerals 1, 2, 3 in Fig. 2 indicate the points awarded when the ball is caused to drop through a particular scoring hole. The ball is released onto the table through an aperture 46 in the rear, and rolls downwardly over the table to a collection or return aperture 48. The table has a guide channel 50 to cause the ball either to roll to the right or left as it emerges from

hole 46, towards a pair of flippers 52, 54 which are operated by the player using the buttons 40 hereinbefore described. The player therefore tries to flip the ball towards the scoring apertures and will try to cause the ball to pass through the maximum value aperture which awards three points. If he fails to operate the flipper properly, the ball will drop through the collection aperture 48 and when this happens he has to wait for the next release of the ball, or specifically another ball, from the top of the table through aperture 46.

The table has display areas 56 and 58 which are printed with the information as shown. These areas are progressively illuminated depending upon the state of play, and the table also has the coin slot 60 referred to herein.

In the display area 56 as shown in enlarged view in Fig. 2, there are the instructions "wait for starters bell" and "flip the ball to score" whilst in the display area 58 it is indicated that each game requires 20p, and an arrow is provided to indicate where the money should be inserted. The arrow points to the slot 60. The display area 58 also contains the instruction "GAME IN PROGRESS".

The display panel to the top end of the play table contains a column showing the numbers and names of the horses, as indicated by reference 62, and also a box 64 which indicates the pay-out for each game. In accordance with the figures mentioned above, this pay-out will be anything between two to twelve tokens and/or tickets (even number amounts only).

Fig. 4 illustrates how the drive for discharging the balls on to the playing surface operates, and the concept of the drive constitutes an independent invention. Under the pay table surface 26, which surface is sloped upwards away from the

player, is provided a tubular guide 66 which is filled with the balls 68. The guide is preferably made up of wire rods 66A extending longitudinally of the tube, and wire hoops 66B, extending circumferentially of the tube, so that the tube 66 is of open construction, which prevents the accumulation of dirt in the guide which could cause sticking or locking of the balls 68 therein.

The guide tube 66 at the rear end curves upwardly as shown by reference 70 and leads to the discharge aperture 46 at the top end of the table. Under the collection aperture 48, the tube 66 has an inlet end and at the inlet end is a pusher ball 72 which is carried by a push rod 74. The rod is slidable in slide bearings 76 and the rod 74 is connected to a sleeve 78 which in turn is pivotally connected to a connection link 80 pivoted eccentrically to a drive disc 82. The disc 82 is adapted to be driven by a motor 84, automatically started when the game commences. The driving of the motor 84 causes the rod 74 to be moved back and forth as indicated by the arrow 86. At the start of the game, there will be a ball 68 in position "X", being the ball which runs into this position at the end of the previous game, and when the rod is moved back and forth, the pusher ball 72 will engage the ball 68 in position X and push all of the balls 68 in the guide 66. The balls in the tube 66 are held from returning to position X, so that a collection space under aperture 48 is created ready to receive the ball which is running down the table. If the ball falls through one of the apertures in the table, it is also directed to position X and therefore the ball is added to the line of balls which is then be pushed as described. The balls are one by one recycled and the row of balls is progressively pushed along the ball guide. The surface 26 is covered by a transparent cover 87 which can be raised, as shown in dotted lines when unlocked, to enable cleaning of the surface 26.

Fig. 4 also shows that the apertures in the table are associated with microswitches 88, 90, 92 and so on so that should the ball fall through any of the table apertures, it will operate the microswitch which in turn feeds a signal to the movable component 1 to 6 and that component is accordingly stepped along the race track as hereinbefore described.

It is to be mentioned that this ball feed device can be modified. It can for example be manually driven instead of power driven.

The apparatus may be arranged such that if no coins have been inserted in any of the coin slots of the play tables, the indicator 42 may be stationary, and is only started when the first coin is inserted to enable a participant to play the game so that there will be a count down from initiation of operation of the apparatus to commence a game, to the actual time of commencement. When the count down starts, the "wait for starters bell" sections of display panel 56 may be illuminated. During the countdown, there may be certain voice over effects. Specifically, there may be an announcement that the race is about to begin, in order to attract other players, and when the race does commence, the voice over may say for example "They're off" indicating the start of the race, to increase excitement of the players. When the count down has been completed and the warning bell rings, the "flip the ball to score" section of display panel 56 will be illuminated as will the "GAME IN PROGRESS" section panel 58. The game takes place as described by the participants manipulating the flippers 40 to control the balls to fall through the table scoring apertures. When the race has been won, the name of the winner remains illuminated and flashes in each of the display panels at the top end of

the table, and during play the pay-out which is anticipated is indicated. The winner is of course paid with this amount. The indicator may be caused to travel at different speeds. For example if all play tables are activated, the indicator hand 44 may sweep quickly across the clock to the start position. The bell rings when the race has been won, and there is a slight delay whilst pay-out takes place and after pay-out, all horses are returned to the start line. The pay-out slot for each table is indicated in Fig. 4 by reference numeral 90.

There preferably also is a display region provided to enable the player to see how many credits he has left should it be that he has inserted in the coin slot more money than that required to play one game.

In an alternative arrangement, the operating locations are defined by slot machines.

In this case the operation of the slot machines for example by pull handles or buttons controls the movement of the models. Each slot machine may be an independently playable unit having its own wins as might any conventional slot machine, but it will also be linked into the models to cause them to be moved when any one of particular combinations of symbols is displayed on the slot machine display window. This arrangement can further enhance player participation, because the player will play the slot machine normally and independently of the other slot machines, but will also be involved in a collective race with the other players, providing considerably enhanced play value. Additionally, the pay-out for winning the race, which can be considered to be a "race jackpot" can be increased depending upon the extent to which the individual slot machines are played. If this jackpot is displayed, then it will increase excitement

for the players, and the players will be very much inclined to participate in play on the slot machines in having this double possibility for a win. Even if one of the models is particularly far advanced along the track, players will still be induced to play those slot machines where the corresponding models are not so well advanced along the track especially if some combinations which are displayed in the slot machine windows propel the models further along the track than others and indeed one combination of symbols may be arranged to propel the corresponding model from the start to the finish line in one movement in which case it could overtake all of the other models, and so on. Therefore many combinations are possible by interlinking the slot machines with the model movements to provide a race win as well as individual wins on the slot machine. The slot machine and model race functions can be interlinked by appropriate electrical and solid state coupling arrangements.

CLAIMS

1. Gaming and/or amusement apparatus playable by a number of participants, and the play of which involves the progression from a starting point or location (S) to a finishing point or location (F), characterised in that the apparatus comprises a number of play mechanisms (26-40) which are coin or token operated, and the arrangement is that one participant plays at one mechanism, and wherein the mechanisms are interconnected so that the pay out to the winning participant is increased dependent upon the number of players.
2. Apparatus according to Claim 1, characterised in that each mechanism 26-40 is of the type involving the propelling of a ball (68) over a play surface (26) which inclines upwardly away from the player with the object of causing the ball to fall through "scoring" apertures (1,2,3) in the play surface.
3. Apparatus according to claim 2, characterised in that each mechanism has ball propelling flippers (52,54) by which the player propels the ball (68) over the surface (26).
4. Apparatus according to claim 2 or 3, characterised in that the surface (26) has a ball return aperture (48) through which the ball (68) falls when the player fails to cause it to pass through a "scoring" aperture (1,2,3), and the mechanism includes a drive (72-84) to cause another ball (68) to be delivered from the top of the surface (26) to be propelled by the player.
5. Apparatus according to claim 4, characterised in that the drive (72-84) comprises a power drive including a motor (76) which operates an eccentric linkage (72-74, 80, 82) which in turn pushes, when the ball (68) falls through the ball return aperture (48) or a scoring aperture (1,2,3), a row of

the balls (68), of which the returned ball (68) if in first in the row, under the play surface (26) so that a ball (68) is delivered over the surface (68) from the top thereof to the player.

6. Apparatus according to claim 5, characterised in that the row of balls (68) is contained in a tube structure (66) defined by wire rods (66A) and hoops (66B).

7. Apparatus according to claim 1 or 2, characterised in that the apparatus comprises a number of movable components (1-6), one for each player, which are adapted to move along tracks (12-20) from a starting line (S) to a finishing line (F) dependent upon the skill of the player in operating his play mechanism (26-40), the arrangement being that the first player who causes his component to reach the finishing line (F) is the winner.

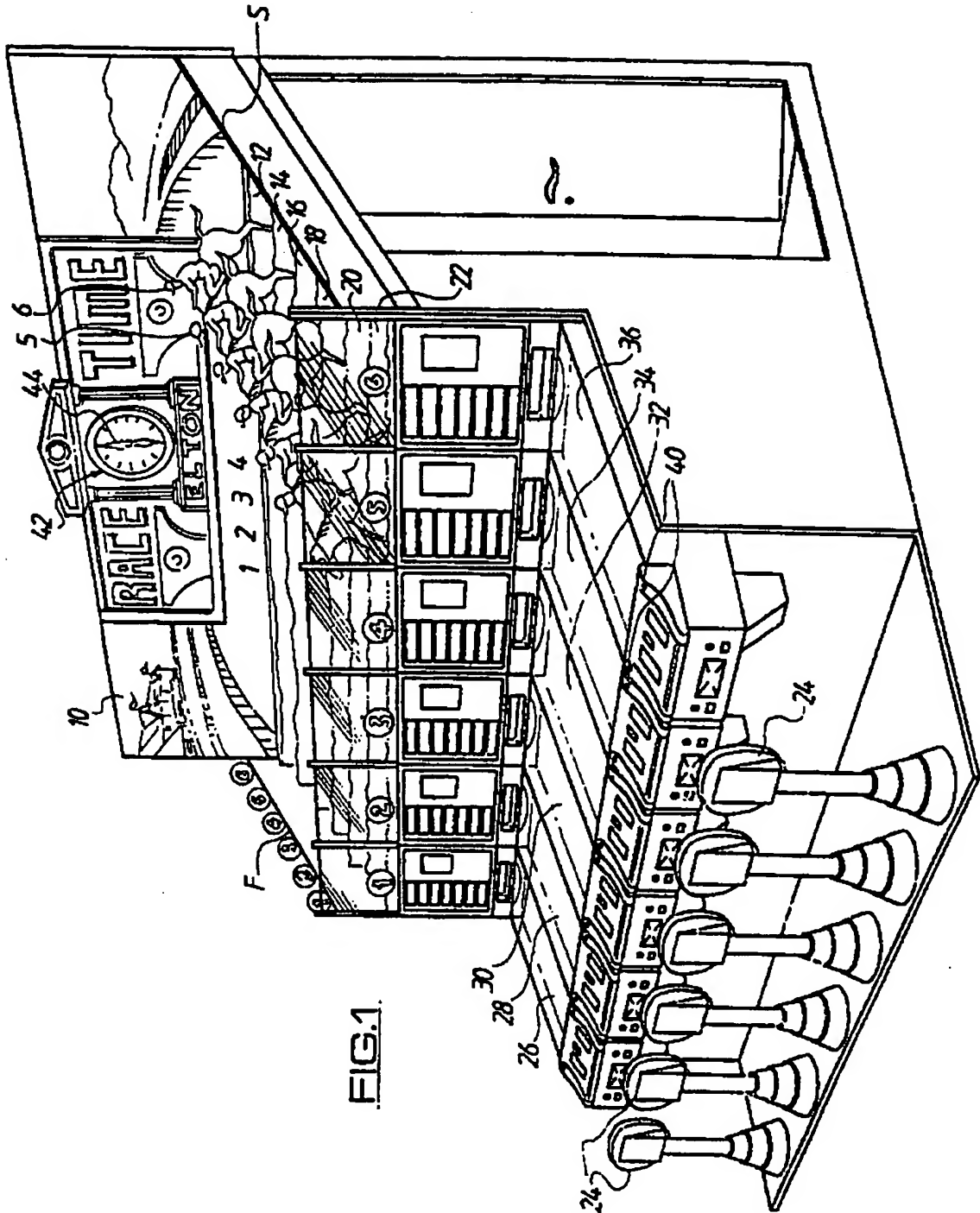
8. Apparatus according to any preceding claim, characterised in that the apparatus has an indicator (42) to indicate when play is about to commence, in order to attract passers-by.

9. Apparatus according to claim 8, characterised in that the indicator (42) comprises a clock face (42) and a hand (44) which sweeps the clock face (42) as soon as one player has inserted a coin or token in order to play the game, the apparatus being set to commence when the said hand (44) reaches the twelve o'clock position, and as it approaches said position, the apparatus indicates visually and/or audibly that play is about to commence so that other players can join in before the said position is reached.

10. Apparatus according to claim 9, characterised in that the hand (44) sweeps the clock face at a faster rate the more players have put coins or tokens in the play mechanism.

11. Apparatus according to any preceding claim, characterised in that the apparatus has a display means (64) which indicates to passers-by the level of the pay out to the winner of each game.
12. Apparatus according to claim 11, characterised in that the said display means (64) comprises a display window (64) on each mechanism.
13. A gaming and/or amusement play table comprising a play surface 26 which slopes downwardly from a far end to a near end at which the player is located, and over which the player propels balls 68 or causes balls 68 to be propelled, with the objective of causing the balls to fall through winning apertures in the surface 26, characterised by a ball feed arrangement comprising a storage tube means 66 located under the play surface filled with the balls 68, a discharge aperture 46 located one end of the tube means 66 and from which a ball 68 is discharged to the player for play, a receiving location X at the other end of the tube means 66 for receiving a ball 68 after play of same, and an actuating device 72-84 by which the row of balls 68, after the ball 68 which has been played has located in location X, can be moved to cause the leading ball 68 to be discharged from the discharge aperture 46 for play.
14. A table according to claim 13, characterised in that the actuating device is power actuated by an electric motor 72.
15. A table according to claim 13 or 14, characterised in that the tube means 66 is made of wire rods 66A and wire hoops 66B.
16. A table according to claim 13, 14 or 15, characterised in

that the discharge aperture 46 is located at the top end of the surface 26 so that the ball 68 discharged therefrom rolls down the surface 26 to the player.



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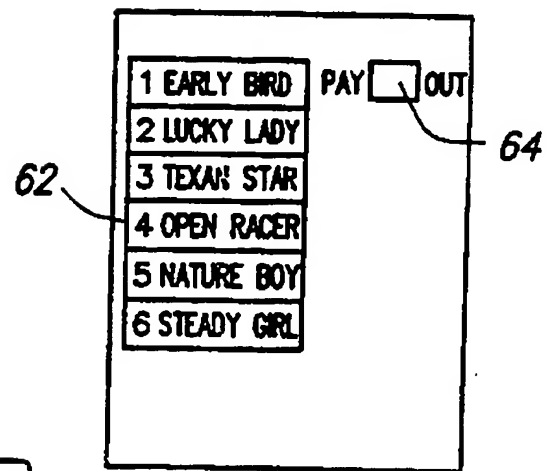


FIG. 3

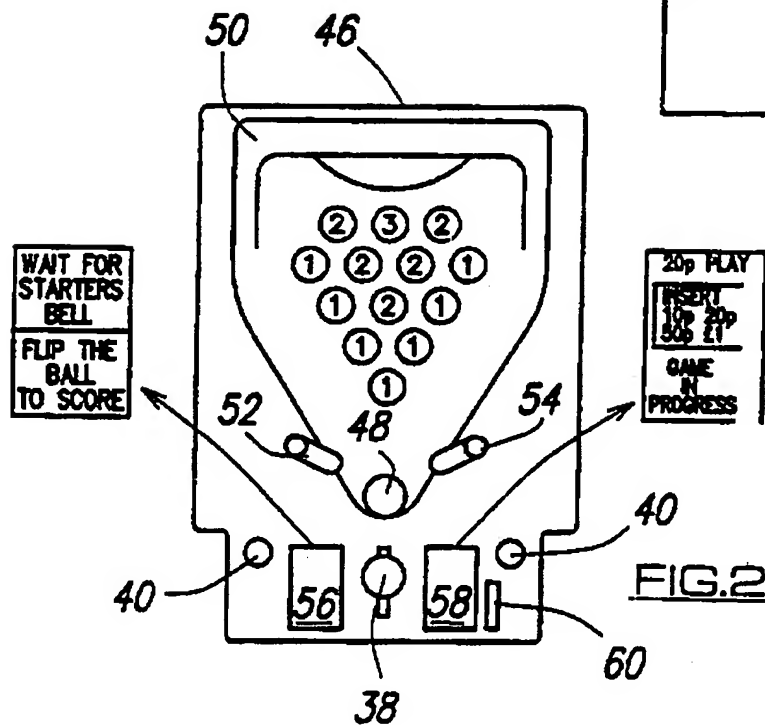


FIG. 2

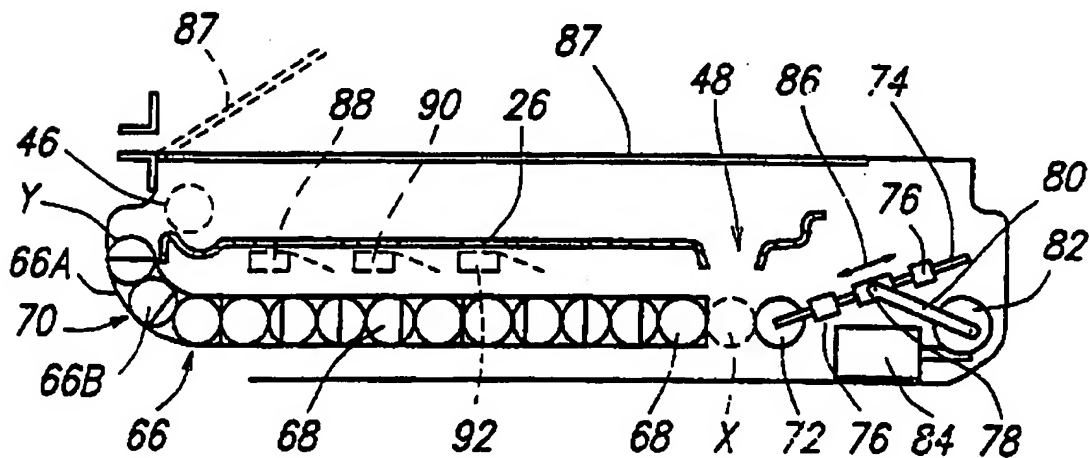


FIG. 4

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